DISTRIBUTED WIND ENERGY ASSOCIATION

our Wind our Power our Future

April 21, 2011

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 02-REN-1038
1516 Ninth Street
Sacramento, CA 95814-5512
docket@energy.state.ca.us

RE: CalWEA Comments on Proposed Changes to the Emerging Renewables Program

Honorable Commissioners and CEC Renewable Energy Program Staff:

Thank you for providing this opportunity to offer input on the proposed changes to the Emerging Renewables Program (ERP) program.

The Distributed Wind Energy Association (DWEA) is a relatively new national trade association comprised of manufacturers, distributors, project developers, dealers, installers, and advocates, whose primary mission is to promote and foster all aspects of the distributed wind energy industry. We define distributed wind as being behind-the-meter generation, whether it's with a 5 kW residential turbine or a 1.5 MW turbine at a water treatment facility.

The fundamental goals of DWEA are to:

- Develop a federal, state and local policy environment that supports the responsible expansion of distributed wind energy
- Reduce or eliminate unwarranted barriers to the use of distributed wind energy
- Provide a unified voice for all members and sectors of the distributed wind industry
- Develop and promote industry "best practices" policies and standards that will foster the safe and effective installation and operation of distributed wind systems
- Participate in public and consumer education

California is a priority state for DWEA because it is a leading market for distributed wind systems and because of the policy leadership the state has demonstrated for more than a decade. That leadership continues. Governor Brown's goal of developing 12,000 MW of distributed renewables in support of the State's AB 32 clean energy target is both exciting and challenging.

DWEA and the small wind turbine manufacturers and retailers are appreciative of the market stimulation provided by the rebate program. Small wind technology has faced significant permitting barriers in California (as outlined in the 2009 KEMA report and the 2010 UC Davis report) and, as a result, has not enjoyed the explosive sales growth seen for solar under the rebate program. Nevertheless, progress has been made and the potential remains large.

The potential for small wind in California is significant. A 2003 study funded by the CEC[1] showed that 24% of California has sufficient resources for small wind (as opposed to a much smaller percentage with wind sufficient for large wind systems) and 1.8 million acres are prime for small wind. The study identified a 500+ MW potential in just a portion of the suitable properties.

California was the first State to offer rebates for small wind (1999) and was for several years the largest State market for small wind. In 2001, for example, California accounted for an estimated 35% of U.S. grid-intertied small wind system sales. The ERP program has also helped create the highest volume small wind dealership in the nation, Guasti Construction near Hesperia in San Bernardino County.

But that momentum was allowed to fade as rebates were reduced and permitting barriers were inadequately addressed. From 2006 to 2009, only ~ 30 small wind turbines on average were installed with ERP support each year. This is one-quarter of the peak annual rate from 2001 and the rate of installations had been declining at ~ 20% per year over those years. Equally problematic, the small wind dealer and installer network has shrunk by ~ 75% over that time.

This trend was in the wrong direction to meet the program goals stemming from the original legislation (SB 1038). Quoting from Page 1 of the ERP Guidebook:

> "The ERP was created to help develop a self-sustaining market for renewable energy systems that supply on-site electricity needs across California. Through this program, the Energy Commission provides funding to offset the cost of purchasing and installing new renewable energy systems using emerging renewable technologies.
>
> The goal of the ERP is to reduce the net cost of on-site renewable energy systems to end-use consumers, and thereby stimulate demand and increased sales of such systems. Increased sales are expected to encourage manufacturers, sellers, and installers to expand operations, improve distribution, and reduce system costs."

The current 10th edition of the ERP Guidebook, updated in April 2010, responded to concerns raised by the small wind industry and it completed the transition from a solar-dominated program to one tailored to the specific needs of small wind and fuel cells. Specifically, the temporarily increased rebate, the longer reservation period, and the elimination of inappropriate (relating to solar modules and inverters) tests and deratings made small wind more competitive in the marketplace and have spurred sales.

<u>The changes have been effective.</u> Sales by the leading supplier to the California small wind market have increased 290% in the last year. A number of additional products from the leading legitimate small wind companies (such as Xzeres, Aerostar, Cascade, Endurance, Gaia, Evance/Iskra, and Proven) are now being sold in California. Lowe's and Home Depot are now offering small wind systems. And, perhaps most importantly, the number of small wind dealers and installers is up dramatically.

The CEC ERP is a good program and the industry appreciates its basic structure and its efficient and responsive administration. But some unaddressed weaknesses in program have undermined its integrity and in recent months have allowed unscrupulous companies to perpetrate a significant fraud that threatens the entire program. DWEA specifically cites the following problems:

[1] "Permitting Small Wind Turbines: A Handbook", Peter Asmus, et al, September 2003, funded by the CEC, see http://www.bergey.com/School/Cal.Permitting.Handbook.pdf

1. Insufficient technical expertise to provide proper due diligence in approving and rating the "Eligible Small Wind Turbines"

    - ❖ DyoCore (1.6 kW at 18 mph) added with an efficiency of 275% … 2.7 times the total kinetic energy in the wind, 4.6 times the theoretical maximum possible efficiency, and 9 times efficiency of the leading small turbines on the market … which is totally impossible!

    - ❖ 5 years ago there were 14 approved turbines. Today there are 181 and 116 of these are of Chinese origin (notoriously unreliable equipment with poor warranty support)

2. The program has no procedure for removing turbines and/or suppliers with poor field reliability and inadequate warranty coverage from program eligibility

    - ❖ Example: ReDriven / Yangzhou-Shenzhou Wind-driven Generator Co.

DWEA first alerted CEC staff to the erroneous / fraudulent DyoCore rating in November 2010 and sent a formal letter to the Commissioners on February 15, 2011. A copy is appended.

DWEA fully supported the suspension of the ERP program in March. DyoCore systems were being offered for $1 and causing tremendous turmoil in the marketplace. This was only possible because the DyoCore product retails for ~$1,800, but qualified for a $4,800 CEC rebate. DWEA estimates that an honest rating for the DyoCore unit would be ~ 0.25 kW, resulting in a $750 rebate. Had this been done correctly there would not have been the huge run-up in rebate applications because customers would not be getting "something for nothing".

The DyoCore unit has been portrayed by its supporters as a technological breakthrough that radically reduces costs and will allow wind power to be used on thousands of homes where conventional wind turbines would not work. Nothing could be farther from the truth. DyoCore combines off-the-shelf generators from Ginlong in China with crude sheet aluminum blades, an assembly for mounting the turbine a few feet above a roof, and off-the-shelf inverters. The legitimate industry, following over 30 years of real world experience, does not recommend the use of aluminum blades (for safety reasons) or roof mounting (for vibration, safety, and performance reasons). A roof is a terrible place to put a wind turbine and extensive studies in the UK (see www.warwickwindtrials.org.uk) have shown that these installations average only 10-15% of projected performance due to sheltering of the wind.

DyoCore has all the markings of a scam and it is giving the small wind industry and the CEC a significant black eye. We believe strong action is called for to remedy these problems, end the threats to this valuable program, and continue the market momentum regained in the last year.

DWEA recommends the following actions:

1. Improve the requirements for product eligibility
2.

    - ❖ Scrub existing product list

    - ❖ Require Small Wind Certification Council (SWCC) certification to AWEA 9.1-2009 after either Jan. 1 or July 1, 2012

    - ❖ Allow "Provisional Eligibility" in the interim if:

- ❖ Turbine is UK MCS or IEC 61400-2 certified, or

- ❖ Turbine is under contract with SWCC, under field test with accredited or SWCC-audited (specific to turbine set-up) organization, and has an SWCC-approved power curve

3. Set the turbine rating for the rebate calculation at the AWEA Rated Power (at 25 mph), per the SWCC approved power curve

4. Increase the rebates to $3.50/W up to 10 kW and $1.75 for 10.1kW – 30 kW (necessary because 25 mph is more conservative than most current rated wind speeds)

5. Hold those levels for two years, then drop them 10% per year

6. Enter into a technical support contract with the Small Wind Certification Council for approvals, reviews, advice, etc. (necessary because KEMA has failed to provide proper due diligence)

7. Strengthen Section II – K, Audits and Inspections, of the Guidebook to allow reviews of operational performance and warranty support and removal of eligibility for cause

8. CEC should not pay the erroneously / fraudulently reserved rebates for DyoCore customers and should pursue recapture of the unearned portion (~ $4,000) of rebates paid to date

These changes would make for a better program and allow small wind to significantly contribute to California's new 33% renewables target.

In closing, we want to thank the CEC for the assistance that the Emerging Renewables Program has provided the small wind turbine industry over the last eleven years. As an industry, we sincerely hope that the Commission will respond positively to our recommendations.

My slides from the testimony I delivered at the workshop are appended.

Respectfully submitted,

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